*Editorial*

# Development and Implementation of Guidelines for Family Practice: Lessons from the Netherlands

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The development of practice policies or clinical guidelines has recently met with great popularity in many countries.[1–4] National consensus development, modeled after the original National Institutes of Health procedure, can be seen in Canada, Scandinavian countries, France, the United Kingdom, the Netherlands, and elsewhere. A more recent initiative is the clinical guideline development by the Agency for Health Care Policy and Research (AHCPR) in the United States.[5] Guidelines are also developed on a large scale by professional bodies and by regional or local groups of care providers and other organizations.[2] Guideline setting is now considered by most policymakers and professional organizations of care providers to be a priority, and essential for the improvement of the quality and efficiency in health care.

A crucial question in this development is: how effective are all these different approaches for setting guidelines? This paper outlines a method for national guideline development for family practice in the Netherlands and provides a comparison of this method with that of the AHCPR in the United States.[6–9] In the Netherlands, national guidelines for family practice care have been developed and disseminated in a rigorous, structured manner since 1987.[10–12] More than 45 of these guidelines covering a wide range of topics have been disseminated among more than 80% of all Dutch family physicians. Using a systematic updating program, which was started in 1991, eight to ten new topics are addressed each year. The guidelines are developed by the Dutch College of General Practitioners (NHG), the scientific organization of family physicians, while the National Association of Family Physicians (LHV, the "union") is responsible for their implementation. A large majority of the almost 7000 practicing family physicians are members of these professional bodies.

This guideline initiative has been quite successful because it is initiated and "owned" by the family physicians themselves. It is also linked to the specific role of the family physician in the Dutch health care system: being the gatekeeper for specialist care, providing long-term, continuous care to patients, and treating patients for minor as well as chronic problems. In addition, guideline development is being adapted to the morbidity in primary care. Watchful waiting and the prevention of unnecessary or potentially harmful care, therefore, are important basic values for the guidelines. The emphasis in the model for Dutch guideline setting differs considerably from that of the AHCPR (Table), which has focused on expensive procedures, such as cataract surgery.

## Guideline-Setting Procedures of the Dutch College of General Practitioners

The 45 guidelines as developed by the Dutch College cover a wide range of problems and conditions seen in family practice, such as type II diabetes, sprained ankle, otitis media, dementia, and sleeping disorders. A guideline incorporates statements on adequate care, sometimes in the form of an algorithm, and supporting background materials. It is structured according to the steps involved in patient contacts (history, examinations, tests, evaluation, patient education, treatment, follow-up, referral), preceded by a clarification of terms and concepts. The aim of guideline development is to provide family physicians with a point of reference for their daily work and to provide a basis for continuing medical education and postgraduate training for family physicians.

In each published guideline, it is emphasized that relevant factors in the individual patient may justify a reasonable departure from the recommended care. In the

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Table. Differences in Aims and Emphasis Between Guideline-Setting Procedures of the Agency for Health Care Policy and Research (AHCPR) and the Dutch College of General Practitioners

| AHCRP | Dutch College |
|---|---|
| • Governmental initiative | • Initiative of professional organization of family physicians |
| • Mainly experts developing guidelines | • Experts and practitioners developing guidelines |
| • Multidisciplinary, including consumers | • Only family physicians |
| • Strong emphasis on evidence-based, scientifically justified guidelines | • Emphasis on mixture of scientific evidence and feasibility in practice |
| • Development and implementation are separate processes | • Implementation is part of developmental process |
| • Patient/consumer preferences on outcomes taken into account | • Patient preferences not included |
| • Small range of topics | • Broad range of topics |
| • Development carried out by independent scientific institutions (contractors) | • Development by and owned by family physicians |
| • Central aim: elimination of inappropriate, unnecessary, and inefficient care | • Central aim: supporting family physicians in daily work and strengthening family medicine as an independent specialism |

developmental process, care is taken to achieve a good balance between evidence-based guidelines and guidelines that are feasible and acceptable in normal practice. Thus, the procedure aims at setting credible guidelines that are equipped with authority and are perceived by family physicians as relevant. A rigorous, structured method that consists of various steps has been gradually developed to achieve this aim.

## *Preparation*

A relevant topic is selected by an independent advisory board, a group of 11 highly experienced family physicians. To be considered appropriate, a topic should be relevant in the context of family practice; it should have a high incidence or prevalence, or both, within family practice; sufficient scientific information on the topic should be available; formulation of an unambiguous guideline should be possible; and the proposed guideline must be capable of improving care and have beneficial consequences for patients' health status and well-being.

After a topic is selected, it is defined carefully, the specific goals of the guideline are formulated, and a plan for a working party is made. A working party is composed of four to eight family physicians who represent a mixture of scientific and practical experience and are supported by staff of the Dutch College. An evaluation among participants of 52 working parties (N=243, response, 96%) disclosed that one half of the participants are affiliated with academic departments of family medicine, while the other half are family physicians in clinical practice. Thirty-nine percent of these participants base their expertise on research activities related to the topic, and 12% have published on the topic. There is a waiting list for future participation.

## *Draft Guidelines*

The second step in guideline setting is analysis of the scientific literature, the exploration of clinical expertise, and the incorporation of these, by consensus discussions, into practical guidelines. Working parties of the College meet in 10 to 15 sessions over a period of approximately 1 to 1½ years for the purpose of developing draft guidelines. Before the first meeting, the College provides the working parties with a synopsis of the relevant literature. This is the starting point for discussions. At the second meeting, a short course on critical reading and evidence-based literature analysis is given. Tasks are then divided among individual group members, who scrutinize the literature related to various aspects of the subjects and draw up the first tentative guidelines. Because scientific evidence is often lacking or conflicting, extensive consensus discussions are then necessary. Experience shows that only a minority (5% to 10%) of guidelines can be based on hard scientific evidence.[1]

## *Testing*

The emphasis in this crucial step is on checking the feasibility and acceptability of a guideline in the actual practice setting. A survey is conducted among 50 randomly selected family physicians, who can give their comments on a written questionnaire with open and closed questions. Attention is particularly given to barriers to the implementation of the guideline in practice. The draft guideline is also sent for comment to a selection of "external reviewers," most of whom are medical specialists and experts in the field most closely associated with the topic. All comments are used in the process of producing a more definitive version of the guideline.

## *Authorization*

An independent scientific board provides the official seal of approval for a guideline. In a tough and lengthy session, the working party has to defend its product before a very critical group of "wise persons" from family medicine, which includes various academic chairs and physicians with long-term involvement in professional bodies. Most guidelines pass with only slight alterations, al-

though some have been referred for adjustments or rejected outright.

### *Formatting*

After approval by the scientific board, the product is finalized: an overview of the guideline is provided in the form of a paper, which is published in the monthly scientific journal for family physicians, and a scientific backup document and a summary of the guideline on a plastic card. More recently, the development of consumer versions and computerized versions of guidelines, in the form of educational brochures, has been undertaken. Generally, much attention is given to present guidelines in a clear didactic and attractive style (Figure).

### *Dissemination and Implementation*

Dissemination of national guidelines in the Netherlands takes place in various ways, following recommendations in this field.[13–16] They are published in the scientific journal for family physicians, which reaches about 85% of physicians. Then specific educational programs are developed to support the teaching and implementation of the guidelines. The infrastructure for postgraduate training and quality assurance (about 100 regional coordinators, who are responsible for setting up educational activities) also can be used to spread the guidelines and the educational programs among all family physicians in the country.

### *Evaluating and Updating*

Surveys are performed at regular intervals among random samples of 8% to 10% of all family physicians in the Netherlands to assess their knowledge and attitudes about guidelines.[11] Surveying has proved that less than 5% of physicians are not well informed about the national guidelines. More than 80% of the physicians surveyed said that they were in favor of national guidelines as a responsibility of the profession and as a basis for ensuring consistent care throughout the profession. However, a growing number of the physicians (about 70%) indicate that the guidelines should not become compulsory. Almost 50% expressed fear that the guidelines could be abused, for instance, by the government, insurers, or patients in pursuing legal claims.

To determine whether the national guidelines are actually followed in practice, an evaluation was performed in the practices of a representative sample of 61 Dutch family physicians. For 10 of the national guidelines, structured self-recording instruments containing key features from the guidelines and specific criteria for adequate performance were developed. These checklists had to be completed after contact with a patient presenting with complaints or conditions included in the national guidelines. The 61 family physicians completed the 10 instruments for several months, producing data for 3481 consultations. The percentage of adherence to the guidelines, which varied among the guidelines, ranged from 49% to 81%. The results disclose, in detail, whether the guidelines were followed and identify the most important barriers to adherence. For example, the guideline for the management of acute otitis media recommends antibiotics for children under 2 years of age and a more reflective approach for older children, for whom antibiotics are seldom considered necessary. Data on performance of the 61 family physicians in 360 first contacts with patients with a diagnosis of acute otitis media revealed that decisions regarding antibiotics differed from the guideline-recommended approach in 26% of cases.[17] Simple analgesics were prescribed as treatment in the majority (54%) of the cases. An antibiotic was prescribed in 21% of the cases, while in 13%, doing so was contrary to the guideline. In another 13% of the cases, an antibiotic was necessary according to the guideline but was not prescribed by the family physician. The guideline suggests a follow-up appointment within 24 hours for children under 2 years of age. In 16% of the contacts, such an appointment was recommended but was not made or not kept.

This type of evaluation provides a detailed understanding of the impact of the guidelines on practice and will be continued on a more systematic basis in the future. Preparations have been made to establish a representative national network of practices that uses special computerized self-recording instruments to collect information on adherence to and outcomes of the national guidelines.

## A Comparison Between the AHCPR and the Dutch College Guidelines Approach

The AHCPR approach is a government-sponsored initiative aimed at the elimination of inefficient, unnecessary care (Table). Emphasis is on the development of evidence-based guidelines for multidisciplinary use and on the inclusion of patients and their preferences in guideline setting. Substantial investments per guideline are made to support the work of expert panels and independent scientific institutions involved in the process.

The Dutch approach is an initiative of family physician organizations aimed at supporting family physicians in their daily work and strengthening the position of fam-

[redacted]

**Levels** (mmol/L):

| Blood glucose level | fasting | 2 hours after challenge |
|---|---|---|
| • normal | ≤5.5 | ≤ 7.7 |
| • impaired glucose tolerance | ≤ 6.7 | 7.8–11 |
| • diabetes mellitus | ≥ 6.7 | ≥ 11.1 |

**Diagnosis diabetes mellitus is certain:**

- in the case of obvious symptoms and 1 abnormal level or
- no obvious symptoms and 2 abnormal levels

[redacted]

**Aims**

| | | good | tolerable | bad |
|---|---|---|---|---|
| • optimizing of weight: | Quetelet index | <25 | 25–27 | >27 |
| • regulation of blood glucose: | fasting | <6.7 | 6.7–8 | >8 |
| | 2 hours after challenge | <9 | 9–10 | >10 |

**Steps**

1. • optimizing of weight (with dietitian)
   • stimulate physical exercise

If after 6 months the blood glucose level has not normalized:

2. • consider drug therapy

**Drug therapy**

**Start with**

tolbutamide (Arrosin, Rastinon, Tolbet, gen)
at 500 mg/day
if necessary, this dosage is increased by 500 mg every 4 weeks, to a maximum of 2 g/day.

**if the result is unsatisfactory**

the medication is replaced with a sulphonylurea-derivative of the second generation:

glibenclamide (Daonil, Euglucon)
at 2.5 mg/day
if necessary, this dosage is increased every 4 weeks to a maximum of 15 mg/day.

or gliclazide (Diamicron)
at 80 mg/day
if necessary, this dosage is increased by 80 mg every 4 weeks, to a maximum of 80 mg 3 times a day.

or glipizide (Glibenese)
at 5 mg/day
if necessary, this dosage is increased by 5 mg every 4 weeks, to a maximum of 20 mg/day.

**if the result is unsatisfactory**

add metformin (Glucophage, gen): one starts with 500 mg/day and increases this, again when necessary, by 500 mg every 4 weeks to a maximum of 850 mg 3 times a day.

**if this fails**

insulin therapy is indicated in principle

[redacted]

**History**

- well-being
- complaints
- weight increase or loss
- problems with diet
- problems with possible medications

**Measurements**

- weight
- blood glucose level (preferably fasting)

[redacted]

**History**

- genital itching
- pain, tingling feeling in extremities
- sexual problems
- blurred vision
- angina pectoris
- intermittent claudication
- weight, diet
- physical exercise
- smoking
- drug therapy

- Ophthalmic examination must take place once annually or every 2 years.

**Physical examination**

- weight
- inspection feet
- a. dorsalis pedis
- blood pressure
- Achilles tendon reflexes

**Laboratory determinations**

- blood glucose level (preferably fasting)
- creatinine
- (cholesterol level)
- protein level

**NHG denotes the Dutch College of General Practitioners.*

Figure. Guideline of the Dutch College of General Practitioners for the treatment of patients with type II diabetes mellitus.

ily medicine in health care. The emphasis balances both the scientific evidence and the feasibility of the guidelines in practice and their acceptance by family physicians.

The two procedures are much alike in the preparation, formatting, and dissemination stages but differ considerably in the draft guidelines stage (a focus on scientific evidence in the AHCPR method compared with more integration of research findings and clinical expertise in the Dutch procedure); guideline testing (little pretesting in the United States method; involvement of large groups of physicians in the Dutch method); authorization (solicited endorsement by specialty groups in the AHCPR approach; an independent scientific jury in the Dutch method); and evaluation (no systematic evaluation of the programs in the United States; systematic evaluations of the diffusion, impact, and effectiveness in the Dutch approach).

## Discussion

Guideline development for family medicine in the Netherlands has been quite successful and well accepted by physicians. The guidelines are generally seen as the state of the art in family practice care. We have found that it is crucial to integrate the processes of implementation into guideline development. This view is now gaining support in the United States. [1,18,19]

The Dutch emphasis on ownership and involvement of practicing physicians and their focus on supporting practitioners in their daily work will contribute to the implementation of the national guidelines. Considering guideline setting as one continuous process that includes the development, diffusion, practice implementation, and systematic evaluation and updating is probably the best guarantee of success.[3]

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